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THE PRACTICAL COLLECTION OF STATISTICAL DATA.

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The scope and power of Registrars in collecting data for mortuary statistics must vary to meet the requirements of their respective communities. The State Registrar views the subject from a purely statistical standpoint, and has not the legal power or means to inquire further. Indeed, he is fortunate if he obtains sufficient information for statistical purposes.

The City Registrar has the same statistical point of interest and two additional: one of the medico-legal and the other of sanitary importance, as prescribed by the laws of his particular locality. Therefore, every death certificate presented to the City Registrar contains three points of about equal interest, and raises in his mind three questions: First, does this certificate of cause of death contain sufficient information for a clear and definite classification? Second, is it sufficiently clear to prevent the concealment of crime or to locate the responsibility if death has been caused by violence? Third, is it sufficiently specific to enable him to make the necessary sanitary precautions to prevent the spread of contagion and properly conserve the interests of public health?

The interests of State and City Registrars are mutual so far as uniformity of collecting and compiling statistics is concerned. There is a wide difference, however, in their methods of obtaining reports of death and means of detecting failure to report. A city whose law requires a permit from the proper officer before a dead body is disposed of in any manner makes possible a complete registration of its deaths; but, before such results can be obtained, the complete operation of the law must be worked out in detail.

I will state briefly the method employed by us and the one that has given the most satisfactory results in our actual work:—

Our city ordinances make it unlawful to remove, bury, cremate, or otherwise dispose of any dead human body until a permit has been obtained from the Commissioner of Health or his duly authorized subordinate. Permission can be granted only upon presentation of a proper certificate of death. Resolutions of the State Board of Health, based upon State law, prescribe what information the death certificate shall contain. The statutes provide that deaths supposed to have resulted

from casualty, violence, or any undue means, shall be referred to the coroner, who alone is authorized by law to inquire into the cause and manner of such deaths. This law precludes the possibility of the return of any great number of unknown causes, the unknown being limited to the cases not recovered until decomposition had so far advanced as to prevent *post-mortem* examination.

After a death certificate is received by the Bureau of Vital Statistics, it passes through the hands of six people and is marked six different times before its final assortment. Being handled by so many clerks for the various purposes, the possibility of its being lost is materially increased. To make loss without immediate detection impossible while in the department, the certificates upon their receipt are numbered, beginning January 1 of each year with Number 1 and running consecutively throughout the year, and the numbers are copied from the burial permits. The closing number for 1906 was 29,048, which represents the actual number of deaths which occurred in Chicago during that year.

The undertaker carries blank forms of the certificate of death which is divided into two parts, the undertaker's report of death and the physician's certificate of cause of death. When called to the care of a dead body, he fills out his report of death, obtaining the information directly from the immediate family, and takes it to the physician who certifies to the cause of death and duration of disease. There are two exceptions to this rule; namely, deaths occurring in hospitals and those returned by the coroner. In hospital cases the entire certificate is filled out in the hospital from information obtained when the patient was admitted, and in the coroner's cases a report is made from the records of his office.

The undertaker in each case takes the certificate of death to the Department of Health, and exchanges it for a burial permit, and the number of the burial permit is written in the upper left-hand corner of the death certificate in ink; then in the right-hand blank space of the certificate the date of issue is marked with a dating stamp.

The name of deceased, age, place and date of death, are then written on a daily report blank, and the serial number is written just above the name. Then with a consecutive numbering machine the serial number is stamped in the upper right-hand margin of the death certificate. The day's certificates are kept together in numerical order, and at the close of each day are checked over by the permit clerk to see that no number is missing, bound together, and passed to the recorder who verifies the count and makes a memorandum of the beginning and closing number of each day and the total number contained. They are again bound together and passed to the marking clerk who, after checking back with the recorder, marks the classification (disease) number with blue pencil in the upper right-hand space, makes his daily tabulation of cause of

death, bundles them again, and with his memorandum passes them to another clerk who marks the sanitary divisions of the city with red pencil in the right-hand margin and copies special diseases on cards. From this desk they go to another where a tabulating card is punched and the permit number and initials of the deceased are placed upon the card. Each clerk who handles the certificates checks them with the preceding.

With this system of checking it is impossible for a death certificate, after it once reaches the permit desk, to be lost without immediate detection. If a number is missing, it is only necessary to refer to the daily report to get the name, age, place and date of death, and thus, if necessary, a new certificate.

The burial permit is made with a counterfoil, which bears the same number as the permit. These numbers run consecutively, beginning on January 1 of each year with Number 1, and are printed on the permits. This is the number that is copied on the death certificate. The undertaker, on receiving the permit, fills out the coupon, copying the information from the burial permit. This permit, with coupon attached, is presented by the undertaker to the superintendent of the cemetery at the time of burial. The superintendent signs, dates, and returns the coupon to the department in a stamped return envelope furnished by the department.

The coupons, when returned to the department, are arranged in numerical order, checked with the death certificates and stamped "Interment Verified." They are then placed in filing cases, as permanent receipts for burials.

An annual inspection of cemeteries is made, and the department records of permits are checked with the cemetery records of interments. Thus burials of the dead without proper permit are reduced to the minimum. In the last year there has been but one body removed from the city without the legal authority, and in this case successful prosecution followed.

Every death that occurs in Chicago, whether of a resident or of a non-resident, is counted, including death of every child that has breathed. All visitors who are taken sick and die here, all deaths of non-residents from accident or violence, occurring within the city limits, and all patients who have come to Chicago hospitals for treatment and die here are included in Chicago's death-rate.

On the other hand, residents of Chicago who die elsewhere are not included in our mortality. There is one exception to this rule. Patients who die at the County Institutions at Dunning which is just outside of the city limits, and who were residents of Chicago, are charged back to the sanitary divisions from which they came.

This method of securing returns has proven very satisfactory, so far as

obtaining reports of death is concerned. A definite and comprehensive cause of death is a very different matter, and leaves a great deal to be desired. Many certificates give a long train of symptoms and conditions as cause of death, and in the end omit the disease which was the real cause. Other certificates show two or three diseases without giving their duration, and all of this notwithstanding the fact that suggestions are printed and arranged on the certificate wherever possible. Even with the closest scrutiny of the certificate and the constant use of the telephone, communicating directly with the physician in all doubtful cases, it is difficult at times to make a classification.

The estimated population of our city used in compiling our mortuary statistics is that furnished by the United States Census Bureau.

The registration of births in Chicago has not compared favorably with that of the deaths for obvious reasons. The statutory laws were about the same in their scope and provisions, each being mandatory in character and providing a penalty for failure to report. Each met with the same indifferent treatment from the profession until the enactment of local laws made a comprehensive system of checking on death reports possible. The duty of enforcing this law has been placed upon one who was directly interested in its success. The birth laws have been changed several times and different means employed in an endeavor to secure more complete returns.

The department at one time supplied physicians and midwives with printed postal cards for the return of births, and all the physicians had to do was to write the name of the mother, date and place of birth, and drop it in a mail box. This was certainly as little trouble as a physician could be put to and do anything at all. Under this system Chicago registered its greatest number of births, 29,568, in the year 1900; but what is 29,568 births per annum for a city of about 300,000 women of child-bearing age? Upon receipt of physician's report card the department mailed a blank, containing space for complete data, to the parents, and the birth records were made from the information obtained in this way.

In May, 1903, the State birth law was amended and certificate prescribed, which rendered the card system inoperative. This law provided for the payment of 25 cents for every report of birth, and declared it a county charge, to be paid out of any county funds not otherwise appropriated. This law went into effect July 1, 1903, yet not a fee has been paid for report in our county. The law further divides the responsibility among physicians, parent, and householder, which is sufficient in itself to render it ineffective, and the responsibility of prosecuting for failure to comply with its terms was placed upon the State's attorneys of the respective counties. With this array of disinterested people in charge

it is not at all surprising that our births returns dwindled to 25,171 in 1906, 4,397 below the high point of 1900.

With the yearly increase in population of 58,435 and an annual addition to the school enrolment of 29,701 children, there is certainly room for considerable improvement.

The department, after a thorough consideration of the question, has formulated a plan of action looking toward the correction of the two causes of failure in the past. First, we propose to ask for an amendment to the law, to place the responsibility on an individual, and, secondly, local legislation to provide a means of checking failures to report. The best means of checking reports of births, and one that will at once place it on a par with report of deaths, is a law requiring each child to present a certificate of birth upon entrance at school or upon beginning employment of any kind, and providing a penalty for any teacher or employer who admits any one under twenty-one years of age to school or work until this formality has been complied with.

If we are successful in our endeavor to secure local authority for this, we hope to be able to report favorable progress at our next meeting.